Letters to the Editor

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- Include no more than 500 words of text, three authors, and five references
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Stentless valve dehiscence

To the Editor:

With great interest we read the article by Richard Hopkins and colleagues[1] on their patient who experienced dehiscence of the preserved noncoronary sinus after subcoronary allograft replacement of the aortic valve. The authors write that this complication might not be unique for this method of allograft implantation and that it could in fact occur with any type of inclusion technique, as long as sinuses are retained. They also suggest that some methods of insertion of stentless xenograft valves could also be liable to this complication.

We can confirm that dehiscence of the stentless xenograft indeed occurs and that it has a strong predilection for the noncoronary sinus. In 10 of 168 patients, partial dehiscence was found 4 to 49 months after subcoronary implantation of a stentless xenograft with preserved noncoronary sinus.[2] In contrast to the reported patient, our patients all received diagnoses relatively early and all underwent reoperations for present or feared valve dysfunction. The mechanism, however, seems similar. Supposedly, proteolytic enzymes from captured blood cells in the dead space between native and donor aortas might prevent adequate fusion of the walls and healing of the anastomosis.

The assumption that this particular problem is related to the concept of coronary sinus inclusion seems very likely, and closure of the dead space might be important when this particular technique is used.

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Reply to the Editor:

We appreciate Professor Schoof and his colleagues for confirming our observations concerning the technical predilections for this complication. We use the stentless xenograft as an aortic root replacement, and therefore we have no experience with techniques liable to this complication, except historically with homografts. The 6% incidence in their series with an inclusion technique retaining 1 or more sinuses is indeed concerning. We concur that meticulous attention to closure of the dead space between the native and implanted sinus walls is critical. When we were using the "scallop" technique, we did use obliterating sutures, which clearly did not obviate this single occurrence. We can only speculate about the potential usefulness of biologic glues to enhance fusion of the walls. In contrast to their 100% reoperation rate, our single case report was also written to make the point that in the absence of valve dysfunction, progressive dehiscence, or the development of thrombus, conservative management appears to be safe with antiplatelet therapy and consistent yearly imaging follow-up.

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Management of postintubation tracheal ruptures

To the Editor:

We read with interest the article by Park and colleagues,[1] who described a new approach for the intraluminal repair of membranous tracheal rupture (TR) after emergency intubation. We congratulate them for their result in an elderly patient in poor condition.

The authors discussed the value of the different approaches to surgical treatment

of TR, mainly transtracheal endoluminal repair through different-shaped anterior tracheotomies. They consider the endoluminal approach "technically complicated owing to limited accessibility and needs a relatively long tracheal injury and complex ventilation management." We agree with this opinion even though semilateral transverse tracheotomy allows better repair in this field.

However, conservative treatment was not discussed, and we consider that the patient could have been managed as follows: prompt placement of a tube in the left side of the chest, microdrainage of subcutaneous emphysema, and advancement of the endotracheal tube distal to the TR to ensure bridging the lesion and mechanical ventilation, which was required to treat the underlying conditions (atelectasis, delirium).

According to the evidence accumulated in the recent literature and our own experience,[2-5] surgical treatment of postintubation TR leads to higher mortality than does conservative management. In patients managed surgically, the initial indication for which the patient was intubated plays a crucial role in postoperative mortality: among patients who underwent emergency intubation for an acute medical event, surgery is usually a high-risk procedure[4] as compared with conservative management (mortality rate 47% vs 29%).[5] Such a high mortality for the repair of TR demands that alternatives to high-risk surgery be considered and surgical repair be reserved for patients in whom bridging the lesion is technically not feasible or for patients with TR diagnosed during thoracic surgery.

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Reply to the Editor:

We thank Dr. Conti and associates for their comments on our report.[1] We agree that conservative management could be the best method for the treatment of postintubation tracheal rupture (TR), especially in stable and spontaneously ventilating patients. However, we disagree with their remark that surgical treatment results in a higher mortality rate than conservative or mechanical ventilation in TR. According to reports about experience with surgical treatment based on relatively large series of patients,[2-4] there were no operation-related deaths or complications after surgical treatment for TR. The cause of death in TR was not the surgical treatment but the underlying condition that necessitated intubation. Surgical treatment was also safe for patients in stable condition.

In general, conservative treatment is selected for first-line treatment. However, we cannot conclude that conservative treatment can succeed in all patients on the basis of experience from this small series of patients.[5] If conservative management fails, subsequent surgical treatment would be more complicated and the chance of mortality would increase. Mechanical ventilation (MV) with bridging or selective ventilation also could be applied in patients unfit for conservative care. However, MV needs complicated management and intensive care, which could induce unforeseen complications. MV requires more medical facilities, cost, and time. Treatment failure with MV is also fatal. Of 14 patients treated by MV in the report by Conti and associates,[5] 1 patient died suddenly on day 3 after an episode of acute hypoxemia, which might be a complication of TR, and 2 patients could not survive despite delayed surgical treatment. Surgical treatment has some advantages over conservative treatment or MV. It is definitive and safe treatment. The success rate is also high. The duration of treatment is relatively short. A weak point is the invasiveness. However, this could be minimized with various less invasive approach methods such as our method. It is apparent that conservative treatment can be the first choice in patients who are in stable condition and breathing spontaneously after TR according to the experience of recent literature and Conti's work. However, physicians should be able to select the best method and offer tailored treatment for each patient on the basis of clear knowledge about advantages and disadvantages of each treatment modality because TR mostly develops in complicated situation and the failure of the treatment might be fatal. The patient in our report[1] was not suitable for conservative treatment because she was not in stable condition and spontaneous ventilation seemed impossible. We thought that more definitive treatment and a shorter duration of treatment would be better for this elderly patient in poor condition. We already had enough experience with tracheal surgery and confidence about surgical outcome. We selected to use surgical treatment as the treatment of choice.

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